29 May 2010, 1:00 pm

Post-Conference Tour

Multiple Members

Post-Conference Tour

The post-conference tour provides a rare and exciting opportunity to view an impressive array of large-scale earthquake engineering testing equipment. We will visit the University of California San Diego Englekirk Center, which is home to the Network for Earthquake Engineering Simulation (NEES) large Outdoor Shake Table, large-scale soil-foundation-structure-interaction testing equipment, and a blast simulator. In addition, there will be live demonstrations of the University of Texas NEES T-Rex mobile shaker and UCLA's NEES eccentric mass shaker, and a virtual tour of UCSB's Wildlife Liquefaction Array test site. Participants from industry will be on-site to demonstrate geophysical equipment and other equipment for seismic site characterization.

Tour guests will enjoy refreshments while observing some of the most impressive and significant large-scale earthquake engineering research equipment in the U.S.

Tentative Schedule

Visit to University of California San Diego
Geostructural Engineering Labs and Shake Table

Saturday May 29, 2010

1:00 PM - Lunch and tour check-in at the conference hotel

2:00 PM - Depart by bus

2:00 PM – 5:00 PM Tour and demonstrations

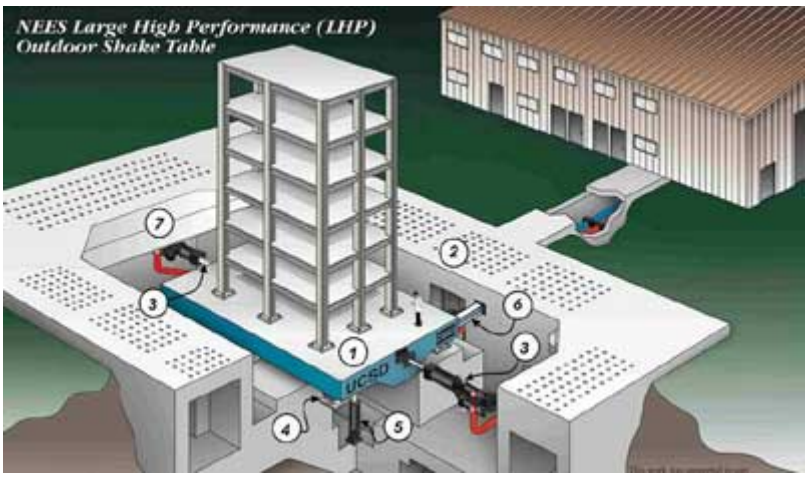
5:00 PM - Return to the conference hotel by bus

EQUIPMENT AND DEMONSTRATIONS

nees@UCSD Outdoor Shake Table

The nees@UCSD Outdoor Shake Table is capable of creating realistic simulations of strong earthquakes and has no height restrictions, thus enabling structural and geotechnical tests which have never been possible before. At 7.6 m by 12.1 m, this is the largest shake table in the United States. Although this table is not the largest of its kind in terms of size in the world, the velocity, frequency range, and stroke capabilities make it the largest table outside Japan, and the world's first outdoor shake table. In addition to shaking structures such as buildings and wind turbines, it as been used in

conjunction with a laminar shear box measuring 6.7 m long by 2.9 m high by 5 m high for geotechnical and soil-structure interaction experiments. More information at **http://www.jacobsschool.ucsd.edu/Englekirk/**.



nees@USCS Outdoor Shake Table

Soil-Foundation-Structure-Interaction Facility

With its refillable soil pits, laminar soil shear box, and two reaction walls, this is the nation's largest facility for testing soil-structure reactions to earthquakes. The reaction walls allow for full-scale testing of systems such as bridge abutments and pile foundations. Also unique to the facility are two soil pits that enable controlled testing of deep foundations. Researchers can tailor soil properties to simulate conditions in specific geographic locations, and to analyze soil-related phenomena caused by earthquakes such as liquefaction and lateral spreading. More information at **http://www.jacobsschool.ucsd.edu/Englekirk/**.

SFSI facility at UCSD

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nees@UTexas T-Rex Shaker

nees@UTexas will bring a large mobile shaker named T-Rex to the Englekirk Center. T-Rex is one of only a few large vibroseis vehicles which provide axis transformation between vertical, inline, and cross-line at the push of a button. In the past five years, nees@UTexas mobile shakers have been used in research projects in the areas of: (1) deep shear-wave velocity profiling, (2) in-situ nonlinear shear modulus measurements of soil, (3) in-situ liquefaction tests, (4) soil-foundation-structure interaction studies, and (5) geophysical studies. Participants can expect to feel the ground vibration generated by T-Rex during the demonstration. More information at **http://nees.utexas.edu/Home.shtml**.

nees@UTexas T-Rex mobile shaker

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nees@UCLA Shaker

nees@UCLA provides equipment, instrumentation, and skilled personnel for the dynamic field testing of structures. nees@UCLA will demonstrate one of their eccentrics mass shakers, commonly used for large-scale, low-level seismic shaking testing of structures, foundations and abutments, in-situ buildings and other structures. The shaker that will be demonstrated is nees@UCLA's medium-size shaker, generating 20,000 lbs peak sine force. The largest shakers generate up to 100,000 lbs peak sine force. Also demonstrated will be nees@UCLA's Mobile Command Center (MCC) truck and instrumentation equipment for the measurement and monitoring of dynamic response of structures. More information at **http://nees.ucla.edu/**.

A nees@UCLA shaker on the LAX Theme Building in Los Angeles during dynamic testing.

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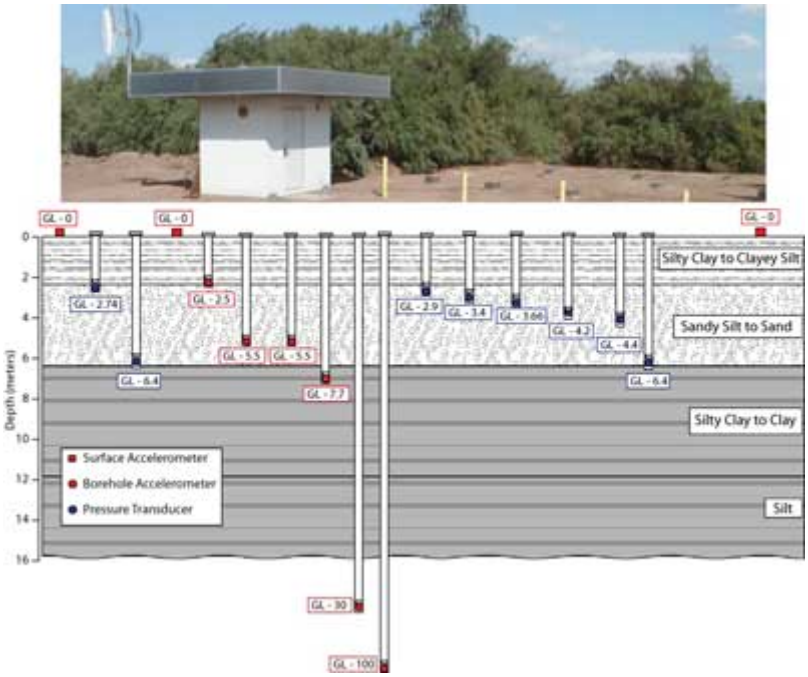
nees@UCSB Wildlife Liquefaction Array

nees@UCSB will provide a virtual tour of the remote field site and demonstrate the new web-based data dissemination portal that provides access to data from the Wildlife Liquefaction Array (WLA). Located in California's Imperial Valley, the WLA field site has recorded a number of moderate (M4-5) earthquakes that have produced ground motions in excess of 10% g and observations of excess pore pressure generation. This area has been frequently shaken by earthquakes with six events in the past 75 years generating liquefaction effects within 10 km of the WLA site. Records from field sites

during actual earthquake shaking provide essential information to scientists who study the effects of earthquakes. In particular, predicting the ground response, ground failure, and liquefaction effects from earthquakes using computer models requires instrumented field sites to validate the simulation methods against real observations. More information at **http://nees.ucsb.edu/**.



The near-surface geology of the nees@UCSB WLA field site and instrumentation plan.